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SPECIALIST EDUCATORS IN
GAMES, ANIMATION & FILM VFX

2022 Subject & Assessment Guide

User Interface Programming

ICT50220 Diploma of Information Technology (Game Programming)

CUA51020 Diploma of Screen and Media

academy of interactive entertainment
Sydney Melbourne Canberra Adelaide Lafayette Seattle Online

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User Interface Programming

Units of Competency

The units of competency that are covered in this subject are as follows:

ICTICT433 – Build graphical user interfaces

CUADIG516 – Design interactions

CUADIG413 – Create user interfaces

Assessment processes and competency evidence requirements are described in the *Assessment Criteria* section below. If you have prior or other evidence against competency, you should discuss this with your teacher.

Subject Overview

Overall Learning Outcomes

- Analyse and Interpret design requirements
- Document user interface designs to meet requirements specifications
- Create prototype user interfaces implementing required functionality
- Test and iterate on GUI designs

Subject Description

The term User Interface (UI) refers to the parts of a system or game that interact directly with a user or player. In video games, UI covers all aspects of player interaction, including how information is presented back to the user in a graphical format and how options are presented on the screen, and the physical interactions read as input (such as mouse, keyboard or gamepad input).

This subject focuses on how UI can be implemented within game engines and the challenges this can present to us as game developers. You will explore UI design principles and industry best practice, designing graphical user interfaces for different hardware and platforms, handling a variety of input methods, as well as diegetic and non-diegetic UI.

Industry Relevance

User Interfaces developers provide an essential role in the development of modern video games, combining the technical skills required to implement a game's input handling with the visual and design elements necessary to create interactions that facilitate and enhance the player's experience.

This technical role requires an intimate understanding of design principles, game engine functionality, and input methods across a range of systems and hardware and skill in programming or scripting to ensure visual components are integrated with game engine logic. User Interface Programmer is a specialisation in many larger game companies and a core skill of any well-rounded video game programmer.

Assumed Knowledge

- Introductory knowledge of the C# programming language

Subject Textbooks

Although not required, the following textbooks are recommended to aid in the completion of this subject:

- Godbold, A, **Mastering UI development with Unity: An in-depth guide to developing engaging user interfaces with Unity 5, Unity 2017, and Unity 2018**, Packt publishing (2018)

Assessment Criteria

Assessment Description

Assessment Milestones

Please refer to your Class Schedule for actual dates on your campus

General Description

In this subject, your task is to design and implement a graphical user interface within the Unity 3D game engine in response to a client brief or set of requirements.

You will start by analysing a design brief and conducting preliminary research into the procedures, processes, and industry best practices to apply to the user interface you will build.

After researching and analysing the requirements, you will write a technical design document that will confirm the nature and scope of the proposed design solution, list the required functionality, detail the actions and events, and any other relevant design information.

You will prototype the user interface described in your design documentation, then test and iterate on your prototype until your final implementation meets requirements.

As part of this assessment, you must also complete and submit one of the following tutorials, available under the *Sample Projects* topic:

- Drag-and-drop shop, or
- Options dialog.

Evidence Specifications

This is the specific evidence you must prepare for and present by your assessment milestone to demonstrate you have competency in the above knowledge and skills. The evidence must conform to all the specific requirements listed in the table below. You may present additional or other evidence of competency, but this should be as a result of individual negotiation with your teacher.

Your Roles and Responsibilities as a Candidate

- Understand and feel comfortable with the assessment process.
- Know what evidence you must provide to demonstrate competency.
- Take an active part in the assessment process.
- Collect all competency evidence for presentation when required.

This table defines the individual requirements for each part of the assessment criteria. Listed here are the cumulative requirements for all assessment items. The evidence requirements for specific assessment items can be seen by referring to the table listed for that assessment item in the following sections.

Assessment and Competency Requirements
1. Specification Analysis Evidence that includes: • Completed workbook (or similar format) containing research addressing the following: o GUI Requirements interpreted from a design brief or specification o Identification of any standards, legislative or organisational requirements and industry best practices applicable to GUI o Functionality of the GUI, including front and back-end for interface o Identification of prototyping tools available o Resources required for development o Required type and level of design documentation o Required format for presentation of design documentation
2. Design Evidence that includes: • A GUI Design Document containing the following information: o Scope of the designed solution o Technical detail of GUI components o GUI actions o UI events o GUI mock-ups o Input handling o Hardware or platform specification

3. GUI Implementation Evidence that includes: • A project within Unity 3D implementing the GUI design specified in the design document • The project implements GUI and functionality specified in the initial brief
4. Tutorial Completion Evidence that includes: • Completion of one of the following tutorials: o Drag-and-Drop Shop o Options Menu • All project files submitted, along with an executable build of the of the project
5. Testing Evidence that includes: • Evidence of continued testing and iteration • Documented outcomes of testing • Feedback from stakeholders/client/trainer sought and integrated into GUI build at least once, with the feedback and its influence on the build process documented

Assessment Instructions for Candidate

METHOD OF ASSESSMENT

Assessment is a cumulative process which takes place throughout a subject. A 'competent' or 'not yet competent' decision is generally made at the end of a subject. Your assessment will be conducted by an official AIE qualified assessor. This may be someone other than your teacher. The evidence you must prepare and present is described

above in this assessment criteria document. This evidence has been mapped to the units of competency listed at the beginning of this document. Assessments will be conducted on a specific milestone recorded above in this assessment guide document.

ASSESSMENT CONDITIONS

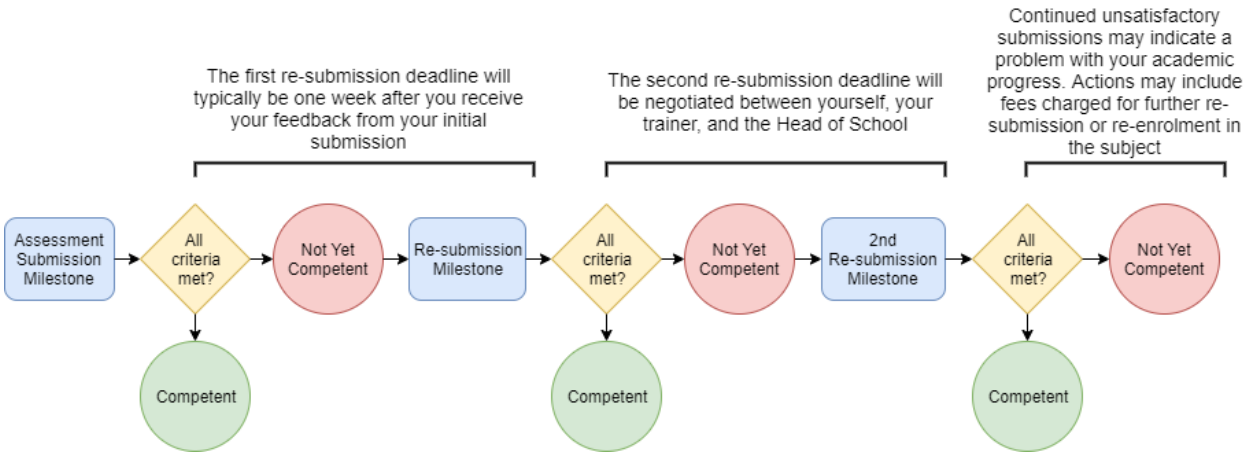
Formative assessment takes place as your teacher observes the development of your work throughout the subject and, although the assessor is likely to be aware of the evidence you are submitting, it is your responsibility to be prepared for the interview where a competency judgement is made (summative assessment). Forgetting something, or making a small mistake at the time of the milestone assessment, can be corrected. However, the assessor may choose to assess other candidates who are better prepared and return to you if time permits.

Upon completion of the assessment you will be issued with feedback and a record of the summative assessment and acknowledge that you have received the result. If you are absent for the nominated assessment milestone (without prior agreement or a sufficiently documented reason) you will be assessed as not yet competent.

GRADING

The assessment you are undertaking will be graded as either *competent* or *not yet competent*.

REASSESSMENT PROCESS



If you are assessed as being not yet competent you will receive clear, written and oral feedback on what you will need to do to achieve competence. Failing to submit an assessment will result in you being assessed as not yet competent. You will be given a reassessment milestone no more than one (1) week later to prepare your evidence. If you are unsuccessful after your reassessment, you may be asked to attend a meeting with your Head of School to discuss your progress or any support you may need and further opportunities to gain competency.

REASONABLE ADJUSTMENTS

We recognise the need to make reasonable adjustments within our assessment and learning environments to meet your individual needs. If you need to speak confidentially to someone about your individual needs, please contact your teacher.

FURTHER INFORMATION

For further information about assessment and support at AIE, please refer to the assessment and course progress sections of your student handbook.

Software

Core

Microsoft Visual Studio

Microsoft's Visual Studio is the recommended IDE for this subject. Other IDEs may be employed if desired as the content of this subject is designed to be cross-platform and IDE agnostic, however we cannot guarantee that all subject material will operate as intended on other IDEs and platforms.

- https://www.visualstudio.com/

Unity3D

Unity3D is a modern game engine used by many developers worldwide for developing games and interactive media. It is free to use, with paid premium options available. For this course you are able to use the free license.

- http://unity3d.com

Microsoft Word

Microsoft Word is industry standard word processing software, development by Microsoft and used throughout the course for creating documents and reports. Microsoft Word allows documents to be saved in *word* format, as well as several other standard document formats including *pdf*.

Learners will have access to Microsoft Word on campus but may also use alternate word processing software capable of loading and saving documents in *word* or *pdf* format.

- https://www.microsoft.com/en-us/education/products/office/default.aspx
- https://www.openoffice.org/
- https://www.google.com.au/docs/about/

7zip

7-Zip is a free and open-source file archiver, a utility used to place groups of files within compressed containers known as "archives". This utility program will be necessary to package your assessment files for submission.

- https://www.7-zip.org/download.html

Suggested

Photoshop / Krita

Whether it is for textures, level design or other art related topics, usually Adobe Photoshop is the software of choice for creating graphic content.
Krita is a free and open-source image editing program, offering functionality comparable to Photoshop.

- https://www.adobe.com/products/photoshop.html
- https://krita.org/en/

